

What is claimed is:

1. A peptide compound, comprising about ten to about 50 amino acids in a sequence, wherein the sequence comprises the integrin binding motif and is further characterized by a biological activity which enhances bone growth, wherein the amino acid may be in the D- or L- conformation.
2. The peptide of claim 1, wherein the integrin binding motif is RGD sequence.
3. The peptide of claim 1, wherein the amino acid sequence is contiguous with the RGD sequence in naturally occurring protein matrix extracellular phosphoglycoprotein.
4. The peptide of claim 1, comprising from about 15 to about 35 amino acids.
5. The peptide of claim 1, wherein the amino acids are in the L-conformation.
6. The peptide compound of claim 1, wherein the peptide is selected from the group consisting of:

AQKSPVSKSKSTHRIQHNIDYLKHL SKVKKIPSDFEGSGYTDLQERGD
RGDAQKSPVSKSKSTHRIQHNIDYLKHL SKVKKIPSDFEGSGYTDLQE
DSQAQKSPVSKSKSTHRIQHNIDYLKHL SKVKKIPSDFEGSGYTDLQDRGD
RGDSPVSKSKSTHRIQHNIDYLKHL SKVKKIPSDFEGSGYTDLQE
DSQAQKSPVSKSKSTHRIQHNIDYLKHL SKVKKIPSDFEGSGRGD
RGDTTHRIQHNIDYLKHL SKVKKIPSDFEGSGYTDLQE
DSQAQKSPVSKSKSTHRIQHNIDYLKHL SKVKKIPSDFERGD
RGDLKHL SKVKKIPSDFEGSGYTDLQE
DSQAQKSPVSKSKSTHRIQHNIDYLKHL SKVKKIPSRGD
RGDLSKVKKIPSDFEGSGYTDLQE
DSQAQKSPVSKSKSTHRIQHNIDYLKHL SKRGD
RGDVKKIPSDFEGSGYTDLQE
DSQAQKSPVSKSKSTHRIQHNIDYLKRGD
RGDIPSDFEGSGYTDLQE

DSQAQKSPVSKSTHRIQHNIDRGD
RGDDFEGSGYTDLQE
DSQAQKSPVSKSTHRRGD
RGDGSGYTDLQE
DSQAQKSPVKRGD
RGDGYTDLQE
DSQAQKSRGD
RGDNDISPFSGDGQPFKDIPGKGEATGPDLEGKDIQTGFA

NDI RGDSPFSGDGQPFKDIPGKGEATGPDLEGKDIQTGFA
NDISPF RGDSGDGQPFKDIPGKGEATGPDLEGKDI
NDISPFSGD RGDGQPFKDIPGKGEATGPDLEGKDI
FSGDGQPFKDIPGKGEATGPDLEGKDIQTGFAGPSEAES RGDTHL
IPGKGEATGPDLEGKDIQTGFAGPSE RGDAESTHL
EATGPDLEGKDIQTGFAG RGDPSEAESTHL
NDISPFSGDGQPFKD RGDIPGKGEATGPDLEGK
GKGEATGPDLEGKDI RGDQTGFAGPSEAESTHL
FSGDGQPFKDIPGKGEATG RGDPDLEGKDIQTGFAGPSEA
DGQPFKDIPGKGEATG RGDPDLEGKDIQTGF
PFKDIPGKGEATG RGDPDLEGKDIQ
DIPGKGEATG RGDPDLEGKDIQTGFAGP
DGQPFKDIPGKGEATG RGDPDLEGKDIQTGF
GKGEATG RGDPDLEGKDIQTGFAGPSEA
EATG RGDPDLEGKDIQTGF
EATG RGDPDLEGK
EATG RGDPD
✓

7. The peptide of claim 1, comprising the sequence
TDLQERGDNDISPFSGDGQPFKD

8. A peptide characterized by:
 - (a) ten to fifty amino acids;
 - (b) an RGD sequence;
 - (c) amino acids substantially the same as those contiguous with an RGD sequence of naturally occurring matrix extracellular phosphoglycoprotein; and
 - (d) biological active in promoting bone growth.

9. The peptide of claim 8, wherein the peptide is selected from the group consisting of

DFEGSGYTDLQERGD
YTDLQERGDNDISPF
ERGDNDISPFSGDGQ
TDLQERGDNDISPFSGDGQPKD

10. An antibody which binds specifically to a peptide of claim 8.

11. An antibody which binds specifically to a peptide of claim 9.

12. A formulation comprising:
 - a carrier; and
 - a therapeutically effective amount of a peptide of claim 8.

13. The formulation of claim 12, wherein the carrier is a saline solution and the formulation is injectable.

14. The formulation of claim 12, wherein the carrier is a paste and the formulation is a toothpaste.

15. The formulation of claim 12, wherein the carrier is an aqueous flavored solution and the formulation is a mouthwash.

16. A pharmaceutical formulation, comprising:
a pharmaceutically acceptable carrier; and
a therapeutically effective amount of a peptide comprising from ten to fifty amino acids which amino acids correspond to an amino acid sequence of naturally occurring protein matrix extracellular phosphoglycoprotein and comprising the RGD sequence of phosphoglycoprotein, the peptide further characterized by enhancing bone growth in a mammal.

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